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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/593,791

Filing Date: September 22, 2006

Appellant(s): FUCHS ET AL.

Shao-Hua Guo
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1 September 2010 appealing from the Office action mailed 5 March 2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 71-83 and 85-99 are pending.

Claims 1-70, 84 and 100-111 are cancelled.

Claims 71-83 and 85-99 are rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

6,586,528	Delaite et al	7-2003
5,753,773	Langhauser et al	5-1998
2002/0037979	Job et al	3-2002
5,103,030	Rohrmann et al	4-1992
2002/0009563	Kawamura et al	1-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 71-83 and 85-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Delaite et al** (US 6,586,528) in view of **Langhauser et al** (US 5,753,773), **Job et al** (US 2002/0037979) and **Rohrmann et al** (US 5,103,030).

The rejection is set forth on pages 2-7 of an Office Action mailed on March 5, 2010 and is incorporated here by reference.

Claims 71, 73, 83, 85, 87, 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Delaite et al** (US 6,586,528) in view of **Langhauser et al** (US 5,753,773), **Job et al** (US 2002/0037979) and **Rohrmann et al** (US 5,103,030), in further view of **Kawamura et al** (US 2002/0009563).

The rejection is set forth on pages 7-8 of an Office Action mailed on March 5, 2010 and is incorporated here by reference.

(10) Response to Argument

Regarding the rejection of claims 71-83 and 85-99 under 35 U.S.C. 103(a) as being unpatentable over **Delaite et al** (US 6,586,528) in view of **Langhauser et al** (US 5,753,773), **Job et al** (US 2002/0037979) and **Rohrmann et al** (US 5,103,030),

Applicant argues that:

- a) the independent claim 71 contains five elements which are conjunctive and all together define the propylene copolymer composition of the invention;
- b) though the Examiner can easily find one or two isolated elements of the claimed composition in the prior art, however, simply assembling those elements together do not reach for a polymer composition;
- c) **Langhauser et al** teaches a block copolymer which has components a) and b) wherein in instant claim 71, the propylene copolymer A and propylene copolymer B are physically blended together;
- d) it is true that **Job et al** shows a metallocene catalyst can produce a polyolefin of Mw/Mn 2-3.5 and **Rohrmann et al** shows metallocene catalysts are stereospecific; but Examiner failed to recognize the combinations of these four references may include an indefinite number of possible polymer compositions and that it is almost impossible for a person of ordinary skill in the art to recognize or come up with the instant claimed propylene copolymer composition after reading these four references; thus, the

combination of these references cannot make claim 71 and its dependent claims 72-83 obvious because, as a whole, the combined teaching of these four references does not fairly suggest the invention and cannot foresee the invention;

e) independent claim 85 relates to a film made from the propylene copolymer composition and has a haze less than about 10.0% and a dart impact greater than 150 gms for 1 mil thick film. Failing to find the claimed film properties from the combination of **Delaite et al, Langhauser et al, Job et al and Rohrmann et al**, the Examiner reached a conclusory statement that the film properties must be the same because the claimed propylene copolymer composition is "identical" to those taught by the cited four references. As discussed above, the combined teachings of those four references do not point to the claimed propylene copolymer composition. The uniqueness of the film relies on the combination of physical properties such as high modulus and high impact resistance with high transparency or low haze.

Examiner disagrees.

As to instant claims 71, 79-82, 99, Delaite et al discloses a propylene polymer composition comprising:

- A) 55-74 parts by weight of propylene copolymer comprising less or equal to 1% (preferably less than 0.75%) of ethylene units (Abstract);
- B) 26-45 parts by weight of propylene copolymer comprising 3.5-15 wt% of ethylene units (as to instant claims 79-81) ; wherein the composition comprises MFI being at least 1 g/10 minutes, preferably 3-15 g/10 min (as to instant claim 82, cited in col. 3,

lines 60-63), as measured under a load of 2.16 kg at 230°C (7.8-9.7 g/10 min in Table 1) (see col. 2, lines 25-35; col. 7, lines 25-36).

As to instant claim 85, the article comprising the composition is in form of a film (see claims 17-18, col. 8, lines 29-33; col. 4, lines 10-16 of **Delaite et al**).

All ranges of the components in the composition of **Delaite et al** are overlapping with the corresponding ranges of the composition claimed in the instant invention. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations *a prima facie* case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). In light of the cited patent case law, it would therefore have been obvious that in this particular instance overlapping of all ranges, including the ranges of the copolymers A) and B) themselves, and also the ranges of the ethylene comonomer within both copolymers A) and B), in the composition of **Delaite et al** and those claimed in the instant invention establishes *a prima facie* case of obviousness as well.

Further, **Delaite et al** clearly states that the polymers of the above composition can be prepared in presence of any catalytic system known to be productive and stereospecific (col. 4, lines 27-29).

Though **Delaitre et al** fails to teach the tensile E modulus of the composition, molar mass distribution Mw/Mn, and to specify the polymer composition being produced in the presence of metallocene catalyst, nevertheless, **Langhauser et al** discloses a propylene block copolymer composition and films made from the composition (col. 1, lines 20-24), wherein the composition comprises:

- 1) 60-80% by weight (see Table) of a copolymer of propylene with 0-5% by weight of C2-C10 alkenes, specifically, ethylene (col. 2, lines 1-2);
- 2) 20-40% by weight (see Table) of a copolymer of propylene with 5-98% by weight of further C2-C10 alkenes, specifically, ethylene (col. 2, lines 1-2);

wherein the composition comprises a melt flow index of from 0.5-50 g/10 min at 230°C under a weight of 2.16 kg (col. 2, lines 12-15); polydispersity (Mw/Mn) in the range of 1.83-2.01 and shear modulus (stiffness) of 515-770 MPa (Table, col. 8).

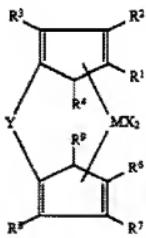
The copolymers of **Langhauser et al** are produced in the presence of metallocene catalysts, comprise reduced melting temperature being in the range of 143-145°C (col. 8, Table), have narrow molecular weight distribution Mw/Mn (col. 6, lines 51-55) and also a high shape stability, which manifests itself in form of high stiffness values (col. 6, lines 51-57). Specifically, Mw/Mn are 1.83-2.01 (see Table in col. 8).

Thus, based on the teachings of **Langhauser et al**, it would have been obvious to a skilled artisan that propylene/ alpha-olefin copolymers, specifically propylene/ethylene

copolymers, produced in the presence of metallocene catalyst, comprise high stiffness (i.e. high toughness and impact properties).

As to instant claims 74-78 and 94-98, the propylene copolymers of were produced using metallocene catalyst comprising methyl- or phenylsilanediyl bis (indenyl) zirconium halide derivatives similar to the structure claimed in the present invention (col. 3, lines 25-67- col. 4, lines 1-55).

Specifically, the catalyst is having the following formula I:



Formula I,

wherein R₁ to R₄ and R₆ to R₉ are each hydrogen, C₁-C₁₀ alkyl, or two adjacent radicals are combined into cyclic saturated, partially saturated or unsaturated groups having from 4 to 15 carbon atoms (col. 3, lines 49-55); thus arriving at T and T' groups (IV), (V) and (VI) as claimed in the instant invention;

X comprises a fluorine, chlorine, iodine or hydrogen (col. 3, lines 42-43);

M is zirconium, hafnium, or titanium (col. 3, lines 39-40);

Y comprises a group of the formula II:



Formula II,

wherein Z is silicon and R¹¹ and R¹² are C₁-C₁₀ alkyl (col. 3, lines 60-67). Specifically, R¹¹ and R¹² are methyl groups (col. 4, lines 18-19, as to instant claims 75 and 95).

Since:

- 1) **Delaitre et al** discloses a propylene polymer composition and films produced from the composition, wherein the composition comprises a physical blend of two propylene/ethylene copolymers having different content of ethylene comonomer units; wherein the composition comprises MFI being 3-15 g/10 min, as measured under a load of 2.16 kg at 230°C, wherein the polymers of the above composition can be prepared in presence of **any catalytic system** known to be productive and **stereospecific** (thus, being open to the use of any stereospecific catalyst), but fails to specify the polymers of the composition being produced in the presence of metallocene catalyst and having a molar mass distribution Mw/Mn of 1.5-3.5;
- 2) **Langhauser et al** discloses a propylene composition and films made from the composition, wherein the composition comprises the copolymers of propylene and

alpha olefin, specifically ethylene; being produced in the presence of the metallocene catalyst and wherein the composition comprises a melt flow index of from 0.5-50 g/10 min at 230°C under a weight of 2.16 kg (col. 2, lines 12-15); a polydispersity (Mw/Mn) in the range of 1.83-2.01; wherein **Langhauser et al** further teaches that the copolymers **having low polydispersity** (Mw/Mn) show **high stiffness** (col. 6, lines 55-57);
3) it is known in the art that using metallocene catalysts for polymerization of polyolefins produces a MWD of 2-3.5, as evidenced by **Job et al** (see [0031] of **Job et al**);
4) it is known in the art that metallocene catalysts are stereospecific, as evidenced by **Rohrmann et al** (see col. 1, lines 11-23 in **Rohrmann et al**),
therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention that producing the propylene polymer composition of **Delaite et al** in the presence of metallocene catalyst of Langhauser et al as the stereospecific catalyst would ensure the final propylene polymer composition having a narrow MWD and having high stiffness, according to the teachings of **Langhauser et al**, thus arriving at the present invention.

Since the propylene polymer composition of **Delaite et al** in view of **Langhauser et al**, as evidenced by **Job et al** and **Rohrmann et al** is identical to the composition claimed in the instant invention, having MWD, MFR, melting temperature identical to the corresponding properties claimed in the instant invention, and is produced in the presence of catalyst identical to that claimed in the instant invention, therefore, other properties of the composition and film of **Delaite et al** in view of **Langhauser et al**, **Job**

et al and **Rohrmann et al**, including tensile E modulus, haze (as related to Appellant's argument regarding independent claim 85), dart impact, WVTR, OTR, carbon dioxide transmission rate, hexane solubility, would intrinsically be identical to the corresponding properties claimed in the instant invention.

Regarding Appellant's argument that **Langhauser et al** teaches a block copolymer which has components a) and b) wherein in instant claim 71, the propylene copolymer A and propylene copolymer B are physically blended together, it is noted that **Langhauser et al** is a secondary reference which was applied to show that propylene/alpha-olefin copolymers, specifically propylene/ethylene copolymers, produced in the presence of metallocene catalyst, comprise low polydispersity Mw/Mn values and are having high shape stability and stiffness. Therefore, given the polypropylene copolymer composition having high stiffness and improved impact properties is desired, it would have been obvious to a skilled artisan to produce the propylene/ethylene copolymer composition of **Delaite et al** in the presence of metallocene stereospecific catalyst as well, especially since **Delaite et al** specifies that the polypropylene composition can be produced in the presence of any stereospecific catalyst. Secondary reference of **Langhauser et al** does not need to teach all limitations. "It is not necessary to be able to bodily incorporate the secondary reference into the primary reference in order to make the combination." *In re Nievelt*, 179 USPQ 224 (CCPA 1973).

Regarding the rejection of claims 71, 73, 83, 85, 87, 89 under 35 U.S.C. 103(a) as being unpatentable over **Delaite et al** (US 6,586,528) in view of **Langhauser et al** (US 5,753,773), **Job et al** (US 2002/0037979) and **Rohrmann et al** (US 5,103,030), in further view of **Kawamura et al** (US 2002/0009563), Applicant argues that although the number of references combined by the Examiner cannot be the sole basis to traverse the rejection, in this case, the number and quality of references cited by the Examiner indicate that the Examiner attempted to reconstruct the invention based on hindsight from Appellants' disclosure and then find isolated elements from multiple references. The Examiner's approach is prohibited by 35 USC 103(a) and MPEP 2142. Appellants believe that the fifth reference of **Kawamura et al** does not add any criticality to the Examiner's rejection.

Examiner disagrees.

Kawamura et al discloses a film comprising a mixture of two propylene/ethylene copolymers (A) and (B); being different in the content of the alpha-olefin, wherein the composition is excellent in transparency (see Abstract). The copolymers (A) and (B) were mixed in different proportions to give different tensile modulus and transparency values (see Table 1).

Thus, **Kawamura et al** was further applied to show that since such properties as tensile modulus and transparency of the final composition depend on the relative proportions between the propylene/ethylene copolymers having different content of ethylene

comonomer and on the content of ethylene comonomer in each of the copolymers (which is the same as composition of **Delaite et al**), such limitations as a) relative proportions between the propylene/ethylene copolymers having different content of ethylene comonomer and b) the content of ethylene comonomer in the copolymers, become result effective variables, therefore, it would have been obvious to one skilled in the art at the time of the invention was made, to make variations in the relative proportions between the propylene/ethylene copolymers having different content of ethylene comonomer and in the content of ethylene comonomer in the copolymers of **Delaite et al** to obtain the desired tensile modulus and transparency values of the final composition. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (MPEP 2144.05 II).

WITHDRAWN REJECTIONS

The rejections of claims 84 and 100-111 under 35 U.S.C. 103(a) as being unpatentable over **Delaite et al** (US 6,586,528) in view of **Langhauser et al** (US 5,753,773), **Job et al** (US 2002/0037979) and **Rohrmann et al** (US 5,103,030) and claim 109 under 35 U.S.C. 103(a) as being unpatentable over **Delaite et al** (US 6,586,528) in view of **Langhauser et al** (US 5,753,773), **Job et al** (US 2002/0037979) and **Rohrmann et al** (US 5,103,030), in further view of **Kawamura et al** (US 2002/0009563) are withdrawn in light of cancellation of cited claims.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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